Morbidly adherent placenta (MAP) is the abnormal adherence of placenta either wholly or partially to the underlying uterine wall. It is a life-threatening complication of pregnancy, as there is considerable morbidity and mortality associated with this condition due to its potential severe haemorrhage at the time of delivery.1,2

According to the American College of Obstetricians and Gynecologists, its incidence is 1:2500 deliveries.3 MAP is classified according to the degree of penetration of chorionic villi and by the area of placental involvement, into 3 types i.e placenta accreta, increta and percreta depending on varying degrees of attachment of anchoring placental chorionic villi into the uterine myometrium. In placenta accreta, there is invasion of decidua basalis and superficial penetration into the myometrium whereas in its extreme and rarest form as placenta percreta, penetrating deep through the myometrium upto the serosal surface and may even involve adjacent organs like urinary bladder, pelvic peritoneum and bowel. Various case reports of uterine rupture due to placenta accreta are available.4,5

There has been a rise in the incidence of MAP worldwide, mainly due to sustained increase in caesarean section rates.6 Previous caesarean section is more likely to be associated with placenta previa (implantation of placenta in lower uterine segment) than previous vaginal delivery (0.68% versus 0.38%).7 Morbidly adherent placenta in association with placenta praevia and previous caesarean section delivery is a condition of increasing clinical significance because of rising caesarean section rate worldwide.8 Women with two or more prior caesarean deliveries, with anterior or central placenta previa are at 40% increased risk for placenta accreta.3

Predisposing factors for placenta accreta are previous uterine damage due to prior uterine surgery leading to scarred uterus as caesarean section, myomectomy, uterine perforation and placenta previa. Women with placenta previa have high chances of MAP if placenta is anterior and they have previously been delivered by caesarean section. There is a dose response relationship between morbidly adherent placenta and caesarean section which shows an increased incidence with increasing number of prior caesarean section.

Pathophysiology for this abnormal placental development involves deficient deciduas with absence of the fibrinoid layer limiting penetration of trophoblastic villi beyond decidua into the myometrium. It leads to absence of physiological plane of cleavage for placental separation after delivery and thus interference with normal mechanism of placental detachment and myometrial contraction to arrest haemorrhage.

Diagnostic modalities include grayscale ultrasound, colour Doppler and three dimensional power doppler imaging to identify low resistance flow, lacunar flow pattern and absence or thinning of bladder myometrial interface.8 Studies found ultrasound and MRI to have comparable detection rates though MRI was superior in detecting depth of infiltration.8,9 Main MRI features are uterine bulge, heterogenous signal intensity within placenta and dark intraplacental bands on T2 weighted imaging. Role of radiology extends beyond diagnosis. Interventional radiology has a significant role in the prophylaxis and management of severe obstetric haemorrhage.

Royal College of Obstetrician and Gynaecologists recommends routine ultrasound scan of all patients at 20-23 weeks to be specifically examined for placental localization, in which a low lying anterior placenta in
patients with prior caesarean section should be meticulously followed-up even in the absence of haemorrhage.

Morbidly adherent placenta can present with life threatening haemorrhage. Repeated caesarean deliveries, high parity and low anterior placenta are associated with worst outcome in MAP. The need for extensive surgical intervention and severe damage to nearby structures, which afford placental adherence, results in extensive morbidity and mortality. The need for massive blood products transfusion predisposes the patients to face threats of hepatitis B, C and HIV even if they are able to survive.

In Pakistan, due to illiteracy and failure to recognize the need for antenatal care, many patients with these serious obstetric disorders are either not antenatally booked or booked at small clinics or maternity homes where either they are not diagnosed antenatally or diagnosis is delayed till they suffer serious haemorrhage. General practitioners, midwives and traditional birth attendants offering obstetric services at small clinics fail to anticipate these obstetric complications. Besides, either the surgical expertise lack at those set ups or absence of on site blood banking services and thus inadequate blood loss replacement in these cases of severe haemorrhage put patient's life into severe risk. As a result, when these patients are referred to tertiary care hospitals, they have already suffered a major blood loss leading to hemodynamic instability. Radical surgical procedures done in emergency for morbidly adherent placenta are associated with high morbidity in such patients despite massive replacement of blood products and intensive management. Besides, even at tertiary care public sector hospitals, fluoroscopy units with 24 hours interventional radiology services are unavailable, which deprive patients of an effective method for prevention and control of haemorrhage and uterine conservation in cases where it is most desirable.

Morbidly adherent placenta diagnosed in the antenatal period, should be dealt with by planned caesarean section. Attempts at placental separation may lead to severe haemorrhage and increased morbidity for the patient. In the face of severe haemorrhage, emergency hysterectomy (surgical removal of uterus) in MAP is known to be more likely associated with damage to bladder, ureter and nearby structures. Optimal management strategy in patients diagnosed in the antenatal period involves planned caesarean hysterectomy with pre-operative ureteric stent placement without attempts at removal. Local studies from Rawalpindi and Karachi, describing 28 and 30 cases of MAP respectively, have also emphasized reduced morbidity following elective caesarean hysterectomy in antenatally diagnosed cases. Mainstay of management in majority of cases is hysterectomy whereas internal iliac artery ligation prior to hysterectomy is reported to reduce perioperative blood loss. Conservative surgical options, which have been reported to be successful in selected cases, are B-Lynch suture with balloon tamponade and endo-uterine hemostatic sutures. Alternatively prophylactic bilateral uterine artery ligation followed by arrest of haemorrhage from placental vessels by balloon tamponade is another suggestion in cases where uterine conservation is desirable. Mainstay of conservative management in a non haemorrhaging patient involves uterine conservation leaving the placenta in situ for later use of systemic methotrexate. Follow-up with uterine doppler for resistance index and appearance of notching are done as these signs herald placental resolution. After a period of 5-6 months, placenta may disappear. During this period, haemorrhage may necessitate surgical intervention. Selection of management strategy depends on prior diagnosis, presence and control of haemorrhage intraoperatively, available facilities and the consideration for uterine conservation.

Interventional radiology has a role since pelvic arterial embolization is in use in well-equipped centres, for cases of postpartum haemorrhage. In severe haemorrhage, uterine artery embolization can be life saving, but the role of prophylactic catheter placement for balloon occlusion or embolization needs further evaluation. International studies reported role of prophylactic internal iliac artery balloon occlusion and or embolization prior to caesarean section or hysterectomy in reducing perioperative blood loss.

Management by multidisciplinary team of professionals at tertiary care hospital reduces morbidity. Patients with previous caesarean section must not be booked at small maternity homes. At secondary or district hospitals, on site blood bank and services of qualified gynaecologist must be available during night time as these patients may present with haemorrhage anytime. Policy of ultrasound for placental localization on antenatal visit at 20 weeks to identify Placenta Previa and referral of those with previous caesarean, to tertiary centre will lead to timely diagnosis with doppler imaging. Patients and their attendants should be fully informed of the diagnosis, its risks, need for hysterectomy, blood transfusion. Following this, antenatal and scheduled delivery management plan and emergency backup plan, be made and documented by senior obstetrician alongwith consent for hysterectomy. Presence of interventional radiological suite may permit pre-operative internal iliac artery balloon placement for occlusion or embolization. Multidisciplinary team meeting involving obstetrician, anesthesiologist, vascular surgeon, hematologist to optimize management should be regularly conducted for such patients. Blood bank policy should have provision for keeping blood cross matched for these patients all the time.
Key to successful management is antenatal diagnosis and anticipation of hemorrhage. Planned management by multidisciplinary team of experienced consultant obstetrician, senior anesthesiologist and haematologist, yields better outcome for these patients. A national guideline should be developed regarding organization of obstetric care, and timing of ultrasound Doppler examination and management interventions in such cases.

REFERENCES


